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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/842,225	04/26/2001	Michel Laberge	201	7426
720	7590	10/07/2003	EXAMINER	
OYEN, WIGGS, GREEN & MUTALA			KIANNI, KAVEH C	
480 - THE STATION			ART UNIT	PAPER NUMBER
601 WEST CORDOVA STREET			2877	
VANCOUVER, BC V6B 1G1				
CANADA				
DATE MAILED: 10/07/2003				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	09/842,225	LABERGE ET AL.
	Examiner Kevin C Kianni	Art Unit 2877

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_ .
- 2a) This action is **FINAL**.      2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.
- 4) Claim(s) 37-39,43 and 156-215 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_ is/are allowed.
- 6) Claim(s) 37-39,43,156 and 208 is/are rejected.
- 7) Claim(s) 157-207 and 209-215 is/are objected to.
- 8) Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 26 April 2001 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on \_\_\_\_ is: a) approved b) disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some \* c) None of:
1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_ .
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                              | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____ . |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)          | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ . | 6) <input type="checkbox"/> Other: ____ .                                   |

## DETAILED ACTION

### ***Allowable Subject Matter***

1. Claims 157-207 and 209-215 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 157-181 are allowable because the prior art of record, taken alone or in combination, fails to disclose or render obvious an optical system configured to project one or more control signal radiation pattern in combination with the rest of the limitations of the base claim.

Claims 182-187 are allowable because the prior art of record, taken alone or in combination, fails to disclose or render obvious wherein each of the switching units in at least one of the first and second groups further comprises an actuator having a magnetic member coupled to move with the optical fiber and a plurality of magnetically polarizable branches spaced apart around the magnetic member in combination with the rest of the limitations of the base claim.

Claims 188-207 are allowable because the prior art of record, taken alone or in combination, fails to disclose or render obvious generating one or more output moiré interference patterns using first control signal radiation in combination with the rest of the limitations of the base claim.

Claims 209-211 are allowable because the prior art of record, taken alone or in combination, fails to disclose or render obvious generating one or more Moire interference patterns by projecting control signal radiation onto a reticle coupled to

move with the moveable optical element in combination with the rest of the limitations of the base claim.

Claims 212-215 are allowed because the prior art of record, taken alone or in combination, fails to disclose or render obvious a plurality of moveable optical elements and wherein respective positions of the moveable optical elements influence the optical path between said first optical fiber and the one of said second optical fibers.

in combination with the rest of the limitations of the base claim.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 37-39, 43, 156 and 208 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stevens (US 4333009).

Regarding claim 37-38, Stevens teaches a method for switching an input optical signal between any of a plurality of output signal channels in an optical switch (shown in at least fig. 1 and 2; see col. 3, line 51-col. 4, line 18+; furthermore the preamble limitation has not been given weight by the examiner because it has been held that a preamble is denied the effect of a limitation where the claim following the preamble is a self-contained description of the structure not depending for completeness upon the introductory clause. Kropa v. Robie, 88 USPQ 478 (CCPA 1951)), the method

comprising detecting a Moire interference pattern and determining therefrom a position of at least one element in said switch (see col. 1, lines 40-46 and col. 2, lines 30-38), said element capable of at least one of: directing one of said output signal channels so as to receive said input optical signal and directing said input optical signal so as to be received by one of said output signal channels (shown in at least fig. 1 and 2, item input signal 23 and output channels 45/41a-c; see col. 3, line 51-col. 4, line 18+); a receiving end of one of said output signal channels and a transmitting end of an input signal channel associated with said input optical signal (shown in at least fig. 1 and 2, item input signal 23 and output channels 45/41a-c; see col. 3, line 51-col. 4, line 18+).

However, Stevens does not explicitly state that the above switch is a cross-connect switch. Nevertheless, Stevens' switch system shown in fig. 3 and 6, comprises optical conductors/fibers that transmit/receive light in switching fashion through openings/reflectors/mirrors in which it is well known to those of ordinary skill in the art that light crossing through a set of input/output fibers known as cross-connect switch, such cross-connection of optical signals provides a mechanism for determining the absolute position and /or the change of position of many different kinds of movable elements (col. 1, lines 24-30).

Regarding claim 39, Stevens teaches a method for switching an optical communication signal emitted from a first optical fiber between any of a plurality of second optical fibers in an optical switching system (shown in at least fig. 1 and 2; see col. 3, line 51-col. 4, line 18+; furthermore the examiner does not grant any patentable weight to the preamble for the analogous reasons stated in rejection of claim 37,

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above), said method comprising detecting a Moire interference pattern (see col. 1, lines 40-46 and col. 2, lines 30-38) and determining therefrom a position of at least one of: (a) an end of said first optical fiber, (b) an end of one of said second optical fibers; (c) an optical element operative to influence an optical path between said first optical fiber and one of said second optical fibers; and (d) a plurality of optical elements operative to influence an optical path between said first optical fiber and one of said second optical fibers (see fig. 1-4, items moving element/s 53a-d and 55 and end fibers 41 and 57; also col. 3, lines 41-63 and col. 4, line 46-col. 5, line 19). Regarding Stevens' teaching of cross-connect the arguments presented in rejection of claim 37 is analogous in rejection of claim 39.

Regarding claim 43, Stevens teaches an optical fiber switch comprising first and second groups of optical fiber switching units, disposed in optically opposing relation (shown in figures 1-3 including opposing fibers 41 and 57), each of the switching units in at least one of said first and second groups (note that the examiner does not grant any patentable weight to the preamble for the analogous reasons stated in rejection of claim 37, above) further comprising:

(a) an optical fiber operative to conduct optical signals (see fi. 2, item 35); and (b) a position encoder operative to detect a Moire interference pattern and determine therefrom a position (see col. 2, lines 39-46 and 56-64; wherein the position encoder is the light receiver/transducer 13) of at least one of: (i) an end of said optical fiber; (ii) an optical element operative to influence an optical path of optical signals associated with said fiber; and (iii) a plurality of optical elements operative to influence an optical path of

optical signals associated with said signal emitted from or coupled into the fiber (see fig. 1-4, items moving element/s 53a-d and 55 and end fibers 41 and 57; also col. 3, lines 41-63 and col. 4, line 46-col. 5, line 19). Regarding Stevens' teaching of cross-connect the arguments presented in rejection of claim 37 is analogous in rejection of claim 43.

Regarding claim 156, Stevens further teaches wherein the encoder comprises a reticle having a spatially varying pattern of interaction with radiation incident thereon (col. 2, lines 30-64 and col. 3, lines 23-30+ and col. 3, lines 23-30).

Regarding claim 208, Stevens further teaches wherein the optical element operative to influence an optical path between said first optical fiber and the one of said second optical fibers comprises a moveable optical element and wherein a position of the moveable optical element influences the optical path between said first optical fiber and the one of said second optical fibers (see fig. 1-3 items 41, 29 and 57; also col. 3, line 49-col. 4, line 18+).

#### ***Response to Arguments and Amendment***

4. Applicant's argument filed on 9/27/03 have been fully considered but they are not persuasive.

Applicant alleges (page 16, last parag.-page 18, 1<sup>st</sup> parag.) that Stevens does not teach a method for switching an input optical signal between any of a plurality of output signal channels in an optical cross-connect switch. Examiner responds that Stevens

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teaches a method for switching an input optical signal between any of a plurality of output signal channels in an optical switch (shown in at least fig. 1-3; see col. 3, line 51-col. 4, line 18+; furthermore the preamble limitation has not been given weight by the examiner because it has been held that a preamble is denied the effect of a limitation where the claim following the preamble is a self-contained description of the structure not depending for completeness upon the introductory clause. *Kropa v. Robie*, 88 USPQ 478 (CCPA 1951)).

Applicant alleges (page 18, 3<sup>rd</sup> parag.- last page) that Stevens does not teach a method for switching an optical communication signal emitted from a first optical fiber between any of a plurality of second optical fibers in an optical cross-connect switch. The examiner responds that Stevens teaches a method for switching an optical communication signal emitted from a first optical fiber between any of a plurality of second optical fibers in an optical switching system (shown in at least fig. 1-3; see col. 3, line 51-col. 4, line 18+; furthermore the examiner does not grant any patentable weight to the preamble for the analogous reasons stated in rejection of claim 37, above).

Applicant asserts (page 19) that Stevens does not teach the limitations of claim 43 because Stevens does not teach the preamble limitations each of the switching and optical cross-connection. The examiner responds that these limitations are not given patentable weight as stated in above preceding paragraphs.

***THIS ACTION IS MADE FINAL***

5. This action in response to applicant's amendment made FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Cyrus Kianni whose telephone number is (703) 308-1216.

The examiner can normally be reached on Monday through Friday from 8:30 a.m. to 6:00 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font, can be reached at (703) 308-4881.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

**or faxed to:**

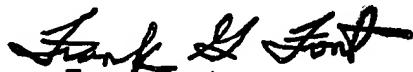
(703) 872-9306 (for formal communications intended for entry)

**or:**

Hand delivered responses should be brought to Crystal Plaza 4, 2021 South Clark Place, Arlington, VA., Fourth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application should be directed to the Group Receptionist whose telephone number is (703) 308-0956.

Kevin Cyrus Kianni  
Patent Examiner  
Group Art Unit 2877

  
Frank Font  
Supervisory Patent Examiner  
Group Art Unit 2877

October 1, 2003